

## CLAIMS

1. A tire molding machine comprising a pair of bead core supporting devices for supporting respective bead rings arranged on a radially outer side of a carcass band and axially spaced by a predetermined distance from each other, and a molding drum including a bead lock section for radially expanding those portions of the carcass band, which are situated on radially inner side of the bead cores so as to urge the carcass band against the bead cores, said tire molding machine being so designed that at least one of the bead cores has a center axis with a controllable inclination angle, wherein:

at least one of said bead core supporting devices, which is capable of holding the bead core to have a center axis with a controllable inclination angle, comprises an annular upright plate, a bead holder ring secured to the annular upright plate, and bead holder ring posture control means for controlling an inclination angle of a center axis of the bead holder ring relative to the annular upright plate, within an angular range including zero degree, wherein said bead holder ring serves to hold the bead core in parallel with a surface of the ring.

2. The tire molding machine according to Claim 1, wherein said bead holder ring posture control means serves to control the inclination angle of the center axis of the bead holder ring in two different directions.

3. The tire molding machine according to Claim 1, wherein both of said bead core supporting devices comprise respective bead holder ring posture control means, said bead holder ring posture control means each serving to control the inclination angle of the center axis of the bead holder ring in a single direction, said angular control directions being different from each other among the respective bead core holder rings.

4. The tire molding machine according to any one of Claims 1 to 3, wherein said bead holder ring posture control means comprises spherical bearings arranged at not less than two locations on the bead holder ring, linear motion shafts each extending in a direction perpendicular to the annular upright plate and having a tip end which is pivotally connected to the bead holder ring in omni-directional manner by the spherical bearing, and shaft moving means for moving the linear motion shafts to desired positions in an axial direction of the annular upright plate.

5. The tire molding machine according to Claim 4, wherein said linear motion shaft comprises a ball screw rod engaged with a female screw in the annular upright plate, said shaft moving means comprises a servomotor with a reduction means, for rotating the ball screw rod directly or indirectly through a gear mechanism, and said

annular upright plate is axially slidably provided with a ball spline or a support shaft, said ball spline or support shaft having a tip end which is pivotally connected to the bead holder ring in omni-directional manner, by a spherical bearing provided on the bead holder ring.

- 5                    **6.**            The tire molding machine according to any one of Claims 1 to 5, wherein said bead core supporting device is movable in an axial direction of the molding drum.